

Tropical rainforest

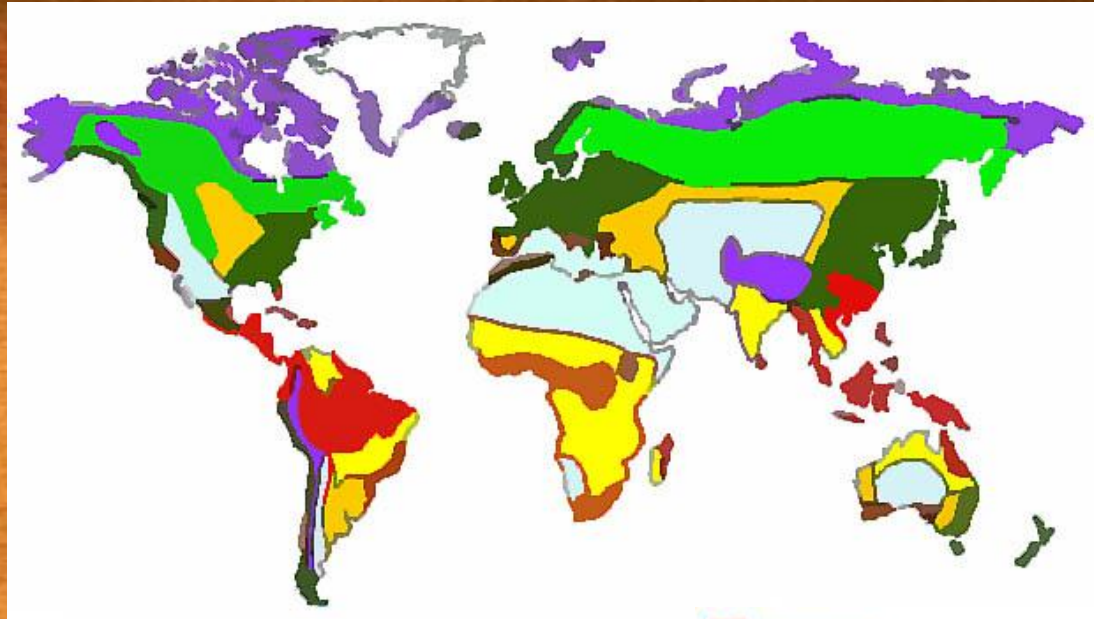
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Location

- Where are they located?
 - Shade the locations of tropical rainforest on your blank world map using a colored pencil
 - Located along the equator, between the Tropic of Cancer and Capricorn.
 - Almost half of all rainforests are located in 3 countries,
 - Brazil
 - Zaire
 - Parts of Indonesia – 10% of world's tropical forest (with over 13,000 islands)

Tropical rainforest around the world...



The following map features the five major biomes and their most important sub-categories. The map was based on data compiled

from **Physical Geography of the Global Environment, 2nd Edition**, by H. J. De Blij, et al; Paperback.



Layers of Life

- Tallest trees- called emergents (115-150' tall)
- Canopy-
 - composed of trees at 65-100' tall. Most trees are evergreen.
- Understory-
 - shrubs/vines at 15' or so... only 2-5% of sunlight reaches this layer
- Forest floor-
 - sheltered, still, always humid. Vegetation is sparse due to lack of sunlight and rapid decay of vegetation.

Layers of life

<http://rainforests.mongabay.com/0404.htm>

Other Characteristics

- Average temperature:
 - Tropical Rainforest 70-85 degrees F
 - Indiana 40-45 degrees F
- Average Rainfall:
 - Tropical Rainforest 60-400 inches
 - Indiana 36 inches

Why is it important to consider tropical rainforests?

- Historically, these forests covered 20% of Earth's surface. Today, only 6-7% of the Earth is covered by rainforests. But, over half of the world's plant and animal species can be found living there.
- [http://en.wikipedia.org/wiki/Medicine_Man_\(film\)](http://en.wikipedia.org/wiki/Medicine_Man_(film))

Rainforest soils....

- Why are soils important? Earth is the apple of my eye....
- Using the soil recipe cards, create a soil profile of the rainforest and Indiana.
- Color in each soil profile and make some observations about the similarities and differences between them.

Soils of the tropical rainforest...

- Conditions are good for growing things in the TRF, 12 hours of sunlight, warmth and precipitation, BUT,
- The nutrients for growing plants/vegetation are stored in the plants themselves. What does this mean?
- The TRF has an extremely fast decomposition process. Fungi, bacteria, and insects break down dead and dying plants/animals into nutrients, which are quickly taken up by the vegetation. The nutrients do not build up on the soil.

Historical connections...

- The interandean region (<http://www.embajada-ecuador.se/Info.HTM>)
- expansion of the Inca domain during the 1400's
- Increasing after the arrival of the Spaniards beginning in the 1530's.

Socio-economic structure

- Spanish colonial economy
 - Organized around large estates, mines, textile mills, etc.
 - Ecological imperialism (unintended impacts of human geographical expansion)
- Hacienda system
 - Reform laws of 1960s too late to save the forests
- interandean forests had been cut and were unable to regenerate due to annual burning and the herds of sheep and cattle brought by the Spanish, which had also devastated the soil over large areas.
- Agrarian Reform Laws (1964, 1972) which promoted the colonization of “vacant” (forest) land as the solution to relieve social pressures caused by inequitable (feudal) land distribution, while expanding the agricultural frontier and subsidizing the growth of export-oriented industrial agriculture.

GHTW: Standard 3

- Students will examine the physical and human geographic factors associated with population characteristics, distribution, and migration in the world and the causes and consequences associated with them.
- Patterns of settlement and distribution...
- Push-pull factors

Colonization

- Opening of roads to previously inaccessible areas
- Impacts
 - Logging, 1/3 of annual deforestation is attributed to the timber industry
 - charcoal burning,
 - slash & burn farming, only sustainable under low populations and with long crop rotations (20-30 years)
 - cattle ranching

Problems to consider...

- What are the problems that exist in the rainforest?
 - Work in groups of 2-3 to come up with ideas on past and current problems in the rainforest.

Problems....

- Slash and burn agriculture- up to 20 million acres cleared each year for farming. (See http://earthobservatory.nasa.gov/Newsroom/NewImages/images.php3?img_id=4588 for an example of deforestation in Brazil)
- Logging- cutting hardwoods for export
- Cattle ranching- abandoned farms converted to ranching.
- Illegal wildlife trade- losing species to trade
- Hydroelectric projects- flooding of rainforests, displacing people/wildlife.

Possible solutions?

- What are some possible solutions to these problems?
 - Work in your groups to come up with some ideas...

Solutions to consider....

- Protecting habitats- creating national parks and reserves; policy/laws
- Restoration of endangered species to the wild- reintroducing animals to protected areas
- Stopping illegal trade
- Education/Training- helping local citizens to see the value of conservation
- Research: we do not know all there is to know about the TRF